## REMARKS/ARGUMENTS

Claims 2, 3, 5, and 6 remain pending in this application. Claims 1 and 4 are cancelled.

Claims 1 through 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,229,221 to Donado et al. (hereinafter "Donado") in view of Publication No. 2002/0085941 to Deevi et al. (hereinafter "Deevi"). Claims 1 and 4 are cancelled rendering the rejection moot.

Independent claim 2 provides a method for manufacturing Ni-Al alloy anode for fuel cells using nickel powders comprising mixing the nickel powders as sintering aids into Ni-Al alloy powders with the mixing ratio of Ni-Al alloy powders to Ni powders ranges from 30:70 to 70:30.

Independent claim 3 provides a method for manufacturing Ni-Al alloy anode for fuel cells using nickel powders, comprising mixing the nickel powders are mixed as sintering aids into Ni-Al alloy powders with the mixing ratio of Ni-Al alloy powders to Ni powders ranges from 40:60 to 60:40.

Claims 5 and 6 provide a Ni-Al alloy anode for fuel cells, manufactured by the method according to claims 2 and 3.

Donado provides a process in which a powder alloy of a base metal and a stabilizing metal is preformed into the wanted anode shape and in which the resulting green structure is sintered in an environment which discourages oxidation of the alloying or stabilizing phase.

Deevi provides a powder metallurgical technique for making high strength, high density powder products of aluminides.

As conceded by the Office Action, Donado does not disclose Ni powder in addition to the Ni-Al alloy powder as provided in independent claims 2 and 3. Thus, Donado fails to disclose or suggest nickel powders being mixed as sintering aids, let alone into Ni-Al alloy powders and that the mixing ratio of Ni-Al alloy powders to Ni powders is in ranges from 30:70 to 70:30, as recited by claim 2, or 40:60 to 60:40, as recited by claim 3.

The Office Action asserts Deevi teaches to add Ni powder to Ni-Al alloy powder in the analogous field of forming sintered alloy compacts for the purpose of improving the compact density and it would have been obvious to one of ordinary skill in the art at the time of the invention to add Ni powder as taught by Deevi to the invention of Donado in order to improve the sinter density. Applicants respectfully disagree.

Independent claims 2 and 3 are directed to a method for manufacturing Ni-Al alloy anode for fuel cells using nickel powders and a Ni-Al alloy anode for fuel cells. In contrast, Deevi provides worked products such as rolled sheets, extruded shapes such as tubes, drawn products such as wires or bars, or molded/forged products such as fuel injection nozzles. (abstract). Moreover, paragraphs [0026] and [0029] of the application provide that "[t]he microstructure of the anode is determined in consideration of the securing of reaction area and gas transfer passage way, distribution in MCFC and electric conductivity, so that a thickness of about 0.8 mm, an initial porosity of above 50%, an average pore size of 3~5 μm are typically provided" and "Ni-Al alloy powders and Ni powders were mixed with each other in a volume ratio of 50:50." In contrast, paragraph [0021] of Deevi provides that "the powder mixture is heated at a heating rate of less than 15°C/min and/or the sintered compact is heated sufficiently to increase the density of the sintered compact to at least 98% of the theoretical density." Thus, Deevi provides for a porosity of less than 2%. Therefore, one of ordinary skill in the art at the time of the invention would not add Ni powder as taught by Deevi to the invention of Donado in order to improve the sinter density.

Furthermore, as conceded by the Office Action, Deevi is silent as to the amount of the Ni powder addition. The Office Action provides that one of ordinary skill determines through routine experimentation the amount of the addition, selecting minimum amounts of

Ni so as to allow for formation of Ni-Al alloy during sintering. Applicants respectfully disagree. As discussed in paragraph [0022] of the application, it is difficult for Ni-Al alloy powders to be sintered at high temperature, mass production of Ni-Al alloy anode is very difficult. Furthermore, paragraphs [0023] through [0025] of the specification provides that:

> the manufacturing method of Ni-Al anode according to the present invention is a method in which Ni powders are mixed to facilitate a sintering of Ni-Al alloy anode. Herein, Ni powders should be added by certain quantity to the extent that they assist only sintering of Ni-Al alloy powders. To maintain features of the existing Ni-Al alloy anode as it is, a microstructure of the anode should be controlled as to have a microstructure as shown in FIG. 1. That is, a feature resistant to a creep the existing Ni-Al alloy anode has can be expected only when Ni-Al alloy powders have a microstructure with 3-D network as shown in FIG. 1. In the present invention, a resistant feature to the creep is changed according to a volume ratio (mass ratio) of Ni-Al alloy powders to added Ni powders.

Applicants have unexpectedly found that beyond a specific volume ratio, Ni-Al alloy powders form a structure of 3-D network where the resistant feature to creep abruptly increase. Moreover, an excellent resistance to creep is achieved by using nickel powders as sintering aids and by mixing Ni-Al alloy powders and Ni powders with the mixing ratio of 30:70 to 70:30, as recited in claim 2, and 40:60 to 60:40, as recited by claim 3. Thus, the mixing ratio of 30:70 to 70:30, as recited in claim 2, and 40:60 to 60:40, as recited by claim 3, is not determined through mere routine experimentation.

Accordingly, Applicants respectfully submit that Donado and Deevi, alone or in combination, fail to disclose or suggest all of the claimed features recited in claims 2 and 3, as well as claims 5 and 6 that depend respectively therefrom. As such, Applicants respectfully request reconsideration and withdrawal of the §103(a) rejection of claims 2, 3, 5, and 6.

In view of the above, Applicants respectfully submit that the claimed invention is patentably distinguishable over the cited combination of art. Accordingly, reconsideration and withdrawal of the rejections and passage of this application to allowance are respectfully requested.

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